



# SRM50-HWZ0-S35

SRS/SRM50

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE®

**SICK**  
Sensor Intelligence.

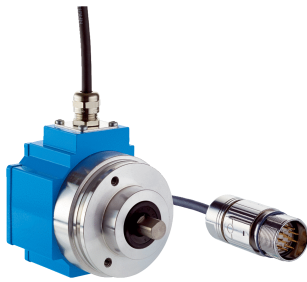


Illustration may differ



### Ordering information

Type	Part no.
SRM50-HWZ0-S35	1080606

Other models and accessories → [www.sick.com/SRS\\_SRM50](http://www.sick.com/SRS_SRM50)

### Detailed technical data

#### Features

<b>Special device</b>	✓
<b>Standard reference device</b>	SRM50-HWV0-K22, 1037098

#### Performance

<b>Sine/cosine periods per revolution</b>	1,024
<b>Number of the absolute ascertainable revolutions</b>	4,096
<b>Total number of steps</b>	134,217,728
<b>Measuring step</b>	0.3 " For interpolation of the sine/cosine signals with, e. g., 12 bits
<b>Integral non-linearity</b>	Typ. ± 45 ", Error limits for evaluating sine/cosine period
<b>Differential non-linearity</b>	± 7 ", Non-linearity within a sine/cosine period
<b>Operating speed</b>	≤ 6,000 min <sup>-1</sup> , up to which the absolute position can be reliably produced
<b>Available memory area</b>	1,792 Byte
<b>System accuracy</b>	± 52 "

#### Interfaces

<b>Type of code for the absolute value</b>	Binary
<b>Code sequence</b>	Increasing, when turning the shaft For clockwise rotation, looking in direction "A" (see dimensional drawing), For clockwise shaft rotation, looking in direction "A" (see dimensional drawing)
<b>Communication interface</b>	HIPERFACE®

#### Electrical data

<b>Connection type</b>	Cable, 8-wire, with male connector, M23, 1 m
<b>Supply voltage</b>	7 V DC ... 12 V DC
<b>Recommended supply voltage</b>	8 V DC
<b>Current consumption</b>	80 mA <sup>1)</sup>
<b>Output frequency for sine/cosine signals</b>	≤ 200 kHz

<sup>1)</sup> Without load.

<sup>2)</sup> This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 60°C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

<b>MTTF: mean time to dangerous failure</b>	235 years (EN ISO 13849) <sup>2)</sup>
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## Mechanical data

<b>Shaft version</b>	Solid shaft
<b>Shaft diameter</b>	10 mm
<b>Flange type / stator coupling</b>	Face mount flange
<b>Dimensions</b>	See dimensional drawing
<b>Weight</b>	≤ 0.2 kg
<b>Moment of inertia of the rotor</b>	25 gcm <sup>2</sup>
<b>Operating speed</b>	≤ 12,000 min <sup>-1</sup>
<b>Angular acceleration</b>	≤ 200,000 rad/s <sup>2</sup>
<b>Operating torque</b>	1 Ncm
<b>Start up torque</b>	+ 1.5 Ncm
<b>Permissible shaft loading</b>	40 N (radial) 20 N (axial)
<b>Life of ball bearings</b>	3.6 x 10 <sup>9</sup> revolutions

## Ambient data

<b>Operating temperature range</b>	-30 °C ... +85 °C
<b>Storage temperature range</b>	-30 °C ... +90 °C, without package
<b>Relative humidity/condensation</b>	90 %, Condensation not permitted
<b>Resistance to shocks</b>	100 g, 10 ms, 10 ms (according to EN 60068-2-27)
<b>Frequency range of resistance to vibrations</b>	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3 <sup>1)</sup>
<b>Enclosure rating</b>	IP65, with mating connector inserted (IEC 60529)

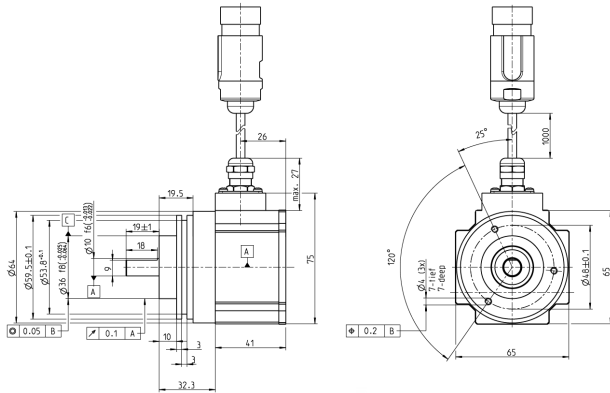
<sup>1)</sup> The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. The GND-(0 V) connection of the supply voltage is also grounded here. If other shielding concepts are used, users must perform their own tests.

## Classifications

<b>ECLASS 5.0</b>	27270590
<b>ECLASS 5.1.4</b>	27270590
<b>ECLASS 6.0</b>	27270590
<b>ECLASS 6.2</b>	27270590
<b>ECLASS 7.0</b>	27270590
<b>ECLASS 8.0</b>	27270590
<b>ECLASS 8.1</b>	27270590
<b>ECLASS 9.0</b>	27270590
<b>ECLASS 10.0</b>	27273805
<b>ECLASS 11.0</b>	27273901
<b>ECLASS 12.0</b>	27273901

<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>ETIM 8.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

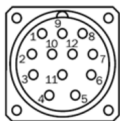
### Dimensional drawing (Dimensions in mm (inch))



### PIN assignment

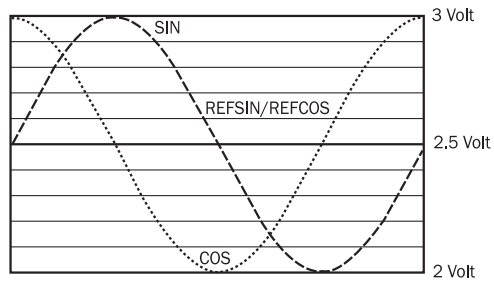
PIN	Wire colors	Signal	Explanation
1	N.C.	-	N.C.
2	N.C.	-	N.C.
3	pink	+COS	Process data channel
4	black	REFCOS	Process data channel
5	white	+SIN	Process data channel
6	brown	REFSIN	Process data channel
7	green	Data-	RS 485 parameter channel
8	gray	Data+	RS 485 parameter channel
9	N.C.	-	N.C.
10	N.C.	-	N.C.
11	blue	GND	Ground connection
12	red	+ Us	7..12 V supply voltage

**Warning:** Shield connection at the connector housing

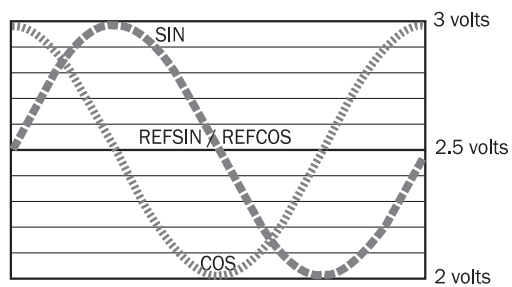


Diagrams

Signal specification of the process channel



Signal diagram for clockwise rotation of the shaft looking in direction "A" (see dimensional drawing) 1 period = 360 ° : 1024  
 Signal diagram for clockwise rotation of the shaft looking in direction "A" (see dimensional drawing) 1 period = 360 ° : 1024



## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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